

REMARKS

This Amendment is fully responsive to the non-final Office Action dated September 30, 2008, issued in connection with the above-identified application. Claims 22-28, 31-37, 40 and 42 were pending in the present application. By this Amendment, claims 22, 25-28, 31-37, 40 and 42 have been amended; and claim 43 has been added. No new matter has been introduced by the amendments made to the claims or by the new claim added. Favorable reconsideration is respectfully requested.

At outset, the Applicants thank Examiner Tang for granting the telephone interview conducted on December 18, 2008 with the Applicants' representative.

During the interview, the present invention as recited in independent claim 22 (i.e., as an exemplary independent claim) and the Hoffberg reference were discussed in detail. It was noted that the present invention (as recited in independent claim 22) is characterized by being able to (i) perform an operation on a device according to a sequence of operations frequently performed on the device by a user, and (ii) predict a device to be used and the function of that device according to a sequence of functions that are generic concepts regarding operations frequently performed by the user. In other words, predicting an operation by a user is done by focusing on not only a sequence of specific operations performed on a device, but also a sequence of functions that are generic concepts regarding operations of the device in order to automatically control the device.

It was noted, on the other hand, that Hoffberg discloses the use of prior history data in order to extract "trends" or "rules," and discloses a climate control system based on learned complex behaviors of a user; such as an individual's movement in a dwelling. Thus, Hoffberg fails to disclose or suggest predicting an operation by the user by focusing on not only a sequence of specific operations performed on a device, but also a sequence of functions that are generic concepts regarding operation of the device in order to automatically control the device.

During the interview, proposed claim amendments were also discussed. It was suggested to amend the independent claims to point out that the frequent operation pattern recited in the independent claims includes operation history data that is classified into a group and accumulated for a plurality of devices during a predetermined time interval. It was agreed that

such claim amendments to the independent claims would help to distinguish the present invention from the Hoffberg reference. The Examiner also suggested amending the claims to avoid a future rejection under 35 U.S.C. 112. At the conclusion of the interview, the Examiner indicated that further search and consideration would be necessary before making a final determination regarding the allowability of the claims.

In the Office Action, claims 40 and 42 have been rejected under 35 U.S.C. 101 for being directed to non-statutory subject matter. With regard to claim 42, the Applicants have amended the claims to point out that the program is “stored on a computer-readable medium” so that the functionality of the program recited in the claim can be fully realized.

With regard to claim 40, the Applicants disagree that the claim lacks hardware. Claim 40 is directed to a service provision apparatus which provides a user with a service. The Applicants’ disclosure indicates that the service provision apparatus can be implemented as a user server apparatus (see pg. 2). More detailed structure of this apparatus is illustrated in Fig. 9. Therefore, claim 40 is not directed to software *per se* but is directed to an apparatus, which clearly falls within one of the four enumerated categories for patentable subject matter. Additionally, the Applicants respectfully point out that the claim 22 is directed to a system that includes the same features of the service provision apparatus of claim 40, and claim 22 was not rejected under 35 U.S.C. 101. Accordingly, withdrawal of the rejection under 35 U.S.C. 101 is respectfully requested.

In the Office Action, claims 22, 25-28, 31-37, 40 and 42 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffberg et al. (U.S. Patent No. 6,400,996, hereafter “Hoffberg”) in view of Michihiro (Japanese Publication No. JP2002-007020, hereafter “Michihiro”). Additionally, claims 23 and 24 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffberg in view of Michihiro, and further in view of Official Notice.

The Applicants have amended independent claims 22, 36, 40 and 42 to further distinguish the present invention from the cited prior art. The Amendments made to the above independent claims are consistent with the amendments discussed during the Examiner Interview (hereafter “interview”) conducted on December 18, 2008. For example, claim 22 has been amended to recite the following:

“[a]n operation history utilization system which utilizes a user’s operation history on a plurality of devices, and provides the user with a service, the system comprising:

a plurality of devices that transmit operation data that describes a user’s operation details on said plurality of devices; and

a service provision apparatus that (i) accumulates the operation data transmitted from said plurality of devices as operation history data in chronological order, (ii) specifies a frequent operation pattern which is a sequence of frequent operation history patterns based on the accumulated operation history data and (iii) provides a service according to the user’s behavior predicted from the specified frequent operation pattern included in the accumulated operation history data,

wherein said service provision apparatus includes:

an operation history reception unit that receives the operation history data transmitted from said plurality of devices;

an operation history database unit that accumulates the received operation history data;

a pattern extraction unit that extracts the frequent operation pattern from the operation history data accumulated in said operation history database unit;

a pattern database unit that stores the extracted frequent operation pattern, the frequent operation pattern including operation history data that is classified into a group and accumulated for the plurality of devices during a predetermined time interval;

a pattern monitor unit that monitors whether or not a sequence of operation history data newly received by said operation history reception unit corresponds to the frequent operation pattern stored in said pattern database unit;

a service provision unit that provides the service according to the user’s behavior predicted from a result of the monitoring performed by said pattern monitor unit; and

a function database unit that stores a predetermined relationship between operations performed by said plurality of devices and a function provided to the user in response to the operations,

wherein said pattern extraction unit that compares the operation history data accumulated in said operation history database unit with a predetermined relationship in said

function database unit, convert the operation history data into a sequence of functions, extract a frequent function pattern from the sequence of functions, and store the extracted frequent function pattern into said pattern database unit,

said service provision unit provides the service relating to said plurality of devices according to the user's behavior predicted from the result of monitoring performed by said pattern monitoring unit, and

the function provided to the user is a main function associated with a names of said plurality of devices.” (Emphasis added).

The features emphasized above in independent claim 22 are similarly recited in independent claims 36, 40 and 42. Specifically, claim 36 is directed to a method; claim 40 is directed to an apparatus; and claim 42 is directed to a program; all of which similarly recite the features noted above in claim 22. The above features of the present invention are fully supported by the Applicants' disclosure (see e.g. pgs. 16-17 and Figs. 11 and 12).

The present invention, as recited in claims 22, 36, 40 and 42, is distinguishable over the cited prior art in that a pattern database unit and/or method stores extracted frequent operation patterns, which include operation history data that is classified into a group and accumulated for a plurality of devices during a predetermined time interval. No such feature is believed to be disclosed or suggested by the cited prior art.

In the Office Action, the Examiner relied on Hoffberg in view of Michihiro for disclosing or suggesting all the features of claims 22, 36, 40 and 42. However, the Examiner relies specifically on Hoffberg for disclosing or suggesting the pattern database unit and/or method of the present invention.

Hoffberg discloses the use of prior history data in order to extract “trends” or “rules,” and discloses a climate control system based on learned complex behaviors of a user, such as an individual's movement in a dwelling. In the Office Action, the Examiner asserts that Hoffberg discloses that a can user regularly use a VCR device to record a particular television show which may appear weekly on a given television channel and at a given time, which can be presented to a user as a sequence of past actions (i.e., that are stored in the system) in connection with providing a service (see e.g., col. 111, lines 16-21).

However, as noted during the interview, Hoffberg fails to disclose or suggest the use of a frequent operation pattern including operation history data that is classified into a group and accumulated for the plurality of devices during a predetermined time interval, which is used in connection with providing a service. Additionally, Hoffberg appears to only disclose or suggest providing a service based on a user's interaction or behavior associated with a single device (i.e., VCR).

Moreover, Michihiro fails to overcome the deficiencies noted above in Hoffberg. Michihiro merely discloses a technique for monitoring operations of a user, storing histories of the operations, and extracting a series of operations that frequently appear as routine processing (operation patterns) from the details of the histories (see e.g., Abstract).

Based on the above discussion, no combination of Hoffberg in view of Michihiro would result in, or otherwise render obvious, claims 22, 36, 40 and 42 (as amended). Likewise, no combination of Hoffberg in view of Michihiro would result in, or otherwise render obvious, claims 23-28, 31-35, 37 and 43 at least by virtue of their respective dependency from independent claims 22 and 36.

With regard to the new claim 43, the Applicants assert that none of the cited prior art discloses or suggests any "function" used as a generic concept of an "operation," as recited in new claim 43. Accordingly, new claim 43 is also distinguishable over the cited prior.

In light of the above, the Applicants respectfully submit that all the pending claims are patentable over the prior art of record. The Applicants respectfully request that the Examiner withdraw the rejections presented in the outstanding Office Action, and pass this application to issue. The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

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